719.2.01 Delivery, Storage, and Handling

General Provisions 101 through 150.

719.3 Construction Requirements

719.3.01 Personnel

General Provisions 101 through 150.

719.3.02 Equipment

General Provisions 101 through 150.

719.3.03 Preparation

General Provisions 101 through 150.

719.3.04 Fabrication

General Provisions 101 through 150.

719.3.05 Construction

1. Place the silt filter bag on a #57 stone gravel bed sloped to ensure that the filtered water will exit at the desired location. Chose the exit location to prevent erosion.
2. Extend the pump hose past the inlet opening to ensure that the silt-laden water will discharge in the center of the bag. Ensure that the seal between the inlet and hose is watertight.
3. When the filter bag is full of silt and cannot readily pass any more water, use a new filter bag. If approved by the Engineer, bury the full filter bag on site or remove the top section of fabric and seed the exposed filtrate.

   The size and number of silt filter bags will be shown on the Plans or determined by the Engineer.

719.3.06 Quality Acceptance

General Provisions 101 through 150.

719.3.07 Contractor Warranty and Maintenance

Continue water filtration as directed by the Engineer.

719.4 Measurement

Silt filter bags measured for payment will be the actual number of bags used for filtration, complete and accepted.

719.4.01 Limits

General Provisions 101 through 150.

719.5 Payment

Payment will be made under:

Item No. 719.	Silt filter bag	Per each

719.5.01 Adjustments

General Provisions 101 through 150.

Section 720—Triangular Silt Barrier

720.1 General Description

The work covered by this section consists of furnishing, installing, and removing water-permeable triangular silt barriers used to remove suspended particles from drainage water.

720.1.01 Definitions

General Provisions 101 through 150.

720.1.02 Related References

A. Standard Specifications

Section 700

B. Referenced Documents

General Provisions 101 through 150.

720.1.03 Submittals

General Provisions 101 through 150.

720.2 Materials

A. General

Triangular silt barriers shall have a water-permeable urethane foam core surrounded by a woven geotextile fabric. The foam core shall have a triangular cross-section with a minimum height of 8 in (200 mm) in the center and a minimum base length of 16 in (400 mm). The other two cross-sectional sides shall be of equal length.

The fabric shall be wrapped around the foam core and shall extend beyond both sides of the triangle at least 24 in (600 mm).

B. Filter Fabrics

Filter fabrics shall be composed of strong rot-proof synthetic fibers formed into a woven fabric. The fabric shall be free of treatment or coating that might significantly alter its physical properties after installation.

The fabric shall contain stabilizers or inhibitors to make the filaments resistant to deterioration from exposure to sunlight or heat. The fabric shall be a pervious sheet of synthetic fibers oriented into a stable network so that the fibers retain their relative position to each other under normal handling, installation, and service conditions. Edges of the fabric shall be finished to prevent the outer yarn from pulling away from the fabric.

Fabrics shall be free of defects or flaws that would significantly affect its physical or filtering properties.

The fabric shall not be exposed to temperatures greater than 140 °F (60 ºC).

The fabric shall meet the following physical requirements:

Tensile Strength – Pounds (newtons (Min.) (ASTM D-4632) (1)	Warp – 260 (1155) Fill – 180 (800)
Elongation (% Max.) (ASTM D-4632)	40
AOS (Apparent Opening Size) (Max. Sieve Size) (ASTM D-4751)	#30 (600 µm)
Flow Rate gal/ min/ft^2 (Liters/min./m^2) (GDT 87)	175 (2850)
Ultraviolet Stability (2) (ASTM D-4632 after 300 hours weathering in accordance with ASTM D-4355)	80
Bursting Strength psi (kPa) (ASTM D-3786 Diaphragm Bursting Strength Tester)	175 (1200)
(1) Minimum roll average of five specimens. (2) Percent of required initial minimum tensile strength.	

C. Wire Staples

Fix the triangular silt barriers to the ground with wire staples. The staples shall be made of 11-gage wire with legs at least 6 in (150 mm) long.

720.2.01 Delivery, Storage, and Handling

During shipment and storage, protect the silt barrier with a heavy-duty covering that will protect the barrier from sunlight, mud, dust, dirt and debris.

720.3 Construction Requirements

720.3.01 Personnel

General Provisions 101 through 150.

720.3.02 Equipment

General Provisions 101 through 150.

720.3.03 Preparation

General Provisions 101 through 150.

720.3.04 Fabrication

General Provisions 101 through 150.

720.3.05 Construction

Install triangular silt barriers according to this Specification, as shown on the Plans or as directed by the Engineer.

1. Excavate a trench 4 to 6 in (100 to 150 mm) deep using equipment such as a trenching machine or motor grader; or, if equipment cannot be operated on site, by hand.
2. Secure the edge of the fabric into the trench with wire staples.
3. Install the fabric in the trench so that 4 to 6 in (100 to 150 mm) of fabric is against the side of the trench with 2 to 4 in (50 to 100 mm) of fabric across the bottom in the upstream direction.
4. Backfill the trench and compact it so that no flow can pass under the barrier.
5. Where the individual sections of triangular silt barrier meet, fix the fabric to the ground with wire staples at each joint location and at each end of the barrier.

The location and quantity of triangular silt barrier to be installed will be affected by the conditions that occur during the construction of the project.

The Engineer may increase, decrease or eliminate the quantity of triangular silt barrier. Do not consider these variations in quantity as alterations in the details of construction or a change in the character of the Work.

Triangular silt barrier may be substituted for baled straw.

720.3.06 Quality Acceptance

The Engineer will reject the barrier at the time of installation if it has defects, rips, holes, flaws, deterioration, or damage incurred during manufacture, transportation, or storage.

720.3.07 Contractor Warranty and Maintenance

Maintain the silt barrier until the Project is accepted or until the silt barrier is removed, and remove and dispose of silt accumulations. Maintenance and sediment removal is covered in Section 165. Remove and replace triangular silt barrier sections whenever effectiveness is reduced due to deterioration.

Remove triangular silt barrier unless the Engineer directs that it be retained. Barriers that have been removed will remain Contractor property and may be used at other locations if its condition is acceptable to the Engineer. When the silt barrier is removed, dress the area to give a pleasing appearance and seed and mulch the area according to Section 700.

720.4 Measurement

The quantity of triangular silt barrier to be paid for will be the actual number of linear feet (meters) of triangular silt barrier, measured in place from end to end of each separate installation, which has been completed and accepted.

720.4.01 Limits

General Provisions 101 through 150.

720.5 Payment

Triangular silt barrier measured as defined above will be paid for at the Contract Unit Price bid per linear foot (meter). Payment shall be full compensation for furnishing all materials; erecting and maintaining the barrier; removing accumulated silt except as described in Subsection 720.3.07; for all dressing and grassing, and for removing the barrier.

Payment for this Item will be made as follows:

- 75% of the Contract Price bid per linear meter will be paid when each barrier is complete in place.
- 25% will be paid at removal or acceptance.

Payment will be made under:

Item No. 720.	Triangular silt barrier	Per linear foot (meter)

720.5.01 Adjustments

General Provisions 101 through 150.

Section 725—Weed Control

725.1 General Description

This work includes furnishing and applying a soil-residual herbicide along shoulders, under base or paving, or in other places to prevent grass and other objectionable vegetation from growing.

725.1.01 Definitions

General Provisions 101 through 150.

725.1.02 Related Specifications

General Provisions 101 through 150.

725.1.03 Submittals

General Provisions 101 through 150.

725.2 Materials

Use any brand of soil-residual herbicide containing liquid or granular Bromacil, Hexazinone, or Prometone.

For sources, see QPL 32.

725.2.01 Delivery, Storage, and Handling

General Provisions 101 through 150.

725.3 Construction Requirements

725.3.01 Personnel

General Provisions 101 through 150.

725.3.02 Equipment

General Provisions 101 through 150.

725.3.03 Preparation

General Provisions 101 through 150.

725.3.04 Fabrication

General Provisions 101 through 150.

725.3.05 Construction

Apply enough soil-residual to provide the active chemical shown below, unless otherwise noted on the Plans or directed by the Engineer.

Bromacil	6 lbs/acre (6.5 kg/ha) (active)
Hexazinone	6 lbs/acre (6.5 kg/ha) (active)
Prometone	20 lbs/acre (22.5 kg/ha) (active)

Do not spill on slopes or other grassed areas. Repair vegetated areas damaged by careless handling of residual herbicide at no additional cost to the Department.